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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,094	11/25/2003	Kie Y. Ahn	303.560US4	7159

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EXAMINER	
KIM, PAUL D	

ART UNIT	PAPER NUMBER
3729	

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/722,094	AHN ET AL.	
	Examiner	Art Unit	
	Paul D. Kim	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) *1-12 and 31-33* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-30 and 34-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/27/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This office action is a response to the amendment filed on 4/27/2005.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 13, 17, 18, 21 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Mizoguchi et al. (US PAT. 5,387,551).

Fig. 1 of Mizoguchi et al. teach a process of forming an inductive element comprising steps of: depositing a layer of magnetic material (12) on a substrate (101); depositing a non-magnetic insulating layer (such as an insulating interlayer, not shown) on the magnetic material layer; forming a substantially circular open inductor (103) in the non-magnetic insulating layer and above the magnetic material layer, the open inductor pattern having an outer edge, wherein the open inductor pattern is unconnected to the layer of the magnetic material; depositing a second non-magnetic insulating layer on the open inductor pattern (such as an insulating interlayer, not shown); and depositing a second magnetic material layer (114) deposited on the second non-magnetic insulating layer (see also col. 5,lines 4-56).

As per claims 17 and 21 the insulating interlayer is made of polyimide film (see also col. 7, lines 9-55).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 22-30 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura et al. (US PAT. 6,448,879) in view of Walsh (U SPAT. 6,233,834).

Kitamura et al. teach a process of making a coil component comprising steps of: depositing a layer of magnetic material (2) on a substrate (1) as shown in Fig. 1; depositing a non-magnetic insulating layer (3) on the magnetic material layer; forming a substantially circular open inductor (4) in the non-magnetic insulating layer and above the magnetic material layer, the open inductor pattern having an outer edge (5); depositing a second non-magnetic insulating layer (6) on the open inductor pattern; and depositing a second magnetic material layer (7) deposited on the second non-magnetic insulating layer as shown in Fig. 1 (see also col. 3, lines 1-55).

As per claim 38 the second non-magnetic insulating layer includes an organic insulator such as material having resin.

However, Kitamura et al. fail to teach the magnetic material used for the second magnetic material. In the manufacturing the inductive element, the magnetic material of the inductive element such as NiFe (as per claims 22 and 26) is used, which is well known in the art. In addition, Walsh teaches a process of making an inductive

component using magnetic material made of NiFe (80/20) in order to provide a high permeability for maximizing inductance. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the magnetic material used for the second magnetic material of Kitamura et al. by magnetic material made of NiFe (80/20) as taught by Walsh in order to provide a high permeability for maximizing inductance.

As per claims 23, 26 and 27 Kitamura also teaches that the substrate is made of a magnetic substrate (Ni-Zn ferrite). Even though Kitamura does not specify a material used for the magnetic substrate as recited in the claimed invention, it would be also obvious matter of design choice to modify the magnetic substrate of Kitamura to obtain the invention as specified in claims 23, 26 and 27 because Applicant has not disclosed that the material as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Kitamura because the magnetic material for the substrate as recited in the claimed invention would perform equally well such as capable of providing a relative permeability for the inductor component of Kitamura. Therefore, it would have been an obvious matter of design choice to modify the magnetic material for the substrate of Kitamura to obtain the invention as specified in claims 23, 26 and 27.

Kitamura teaches all of the limitations as set forth above except materials used for the open inductor pattern and non-magnetic insulating layer as recited in the claimed invention. At the time the invention was made, it would have been an obvious matter of

design choice to a person of ordinary skill in the art to apply the conductive material for the substantially circular open inductor and the insulating material for the non-magnetic insulating layer as recited in the claimed invention because Applicant has not disclosed that the conductive material and the insulating material as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Kitamura because the conductive material for the substantially circular open inductor as recited in the claimed invention would perform equally well such as capable of conducting current and the insulating material for the non-magnetic insulating layer as recited in the claimed invention would perform equally well such as capable of preventing electrically connection between the magnetic layers of Kitamura Therefore, it would have been an obvious matter of design choice to modify the conductive material for the substantially circular open inductor and the insulating material for the non-magnetic insulating layer of Kitamura to obtain the invention as specified in claims 24, 25, 28-30 and 35-38.

5. Claims 14-16, 19, 20, 23-25 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al.

Mizoguchi et al. teach all of the limitations as set forth above except materials used for the open inductor pattern and non-magnetic insulating layer. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to apply the conductive material for the substantially circular open inductor and the insulating material for the non-magnetic insulating layer as

recited in the claimed invention because Applicant has not disclosed that the conductive material and the insulating material as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Mizoguchi et al. because the conductive material for the substantially circular open inductor as recited in the claimed invention would perform equally well such as capable of conducting current and the insulating material for the non-magnetic insulating layer as recited in the claimed invention would perform equally well such as capable of preventing electrically connection between the magnetic layers of Mizoguchi et al. Therefore, it would have been an obvious matter of design choice to modify the conductive material for the substantially circular open inductor and the insulating material for the non-magnetic insulating layer of Mizoguchi et al. to obtain the invention as specified in claims 14-16, 19, 20, 24, 25 and 28-30.

As per claims 23 and 27 Mizoguchi et al. also teaches that the substrate is made of a magnetic substrate (Si). Even though Mizoguchi et al. does not specify a material used for the magnetic substrate as recited in the claimed invention, it would be also obvious matter of design choice to modify the magnetic substrate of Mizoguchi et al. to obtain the invention as specified in claims 23 and 27 because Applicant has not disclosed that the material as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Mizoguchi et al. because the magnetic material for the substrate as recited in the

claimed invention would perform equally well such as capable of increasing inductance of Mizoguchi et al. Therefore, it would have been an obvious matter of design choice to modify the magnetic material for the substrate of Mizoguchi et al. to obtain the invention as specified in claims 23 and 27.

Response to Arguments

6. Applicant's arguments with respect to claims 13-30 and 34-38 have been considered but are moot in view of the new grounds of rejection.

7. Applicant argues that the prior art of record fails to disclose the open inductor pattern, which is unconnected to the layer of the magnetic material. The prior art of Mizoguchi et al. show that the open inductor pattern is unconnected to the layer of the magnetic material a shown in Fig. 1. Also, examiner withdraws the allowable subject matter for claims 22 and 26 for the magnetic material of Ni and Fe used for the second magnetic material. As examiner indicates as set forth above, in the manufacturing the inductive element the magnetic material of the inductive element such as NiFe is used, which is well known in the art. Also, the prior art of Walsh teaches the magnetic material made of NiFe (80/20), which is used to fabricate the inductive component in order to provide a high permeability for maximizing inductance. Therefore, it would be obvious to modify the magnetic material used for the second magnetic material of Kitamura et al. by magnetic material made of NiFe (80/20) as taught by Walsh in order to provide a high permeability for maximizing inductance.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D. Kim whose telephone number is 571-272-4565. The examiner can normally be reached on Monday-Friday between 7:00 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paul D Kim
Examiner
Art Unit 3729